STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
OROVILLE DAM SAFETY
COMPREHENSIVE NEEDS ASSESSMENT

Independent Review Board

Memorandum #1

June 19, 2018

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IRB Members

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IRB Members

- (Elizabeth) Betty Andrews, Environmental Science Associates
- Dr. Lelio Mejia, Geosyntec Consultants
- Bruce Muller, US Bureau of Reclamation (Retired)
- Paul Schweiger, Gannett Fleming, Inc.

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General Observations

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General Observations

- Oroville Dam benefits numerous people throughout the state of California and the nation.
- Extraordinary efforts are underway to repair the damage to the spillway from February 2017.
- DWR has appropriately initiated an effort to comprehensively consider all aspects of the safety of Oroville Dam.
- DWR has assembled 6 teams of highly respected experts to address the key potential safety issues at the dam.

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Specific Recommendations

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1. Does the IRB have any recommendations or comments on the background and purpose of the Comprehensive Needs Assessment project?

- CNA is well conceived and planned.
- CNA is an appropriate effort to assure the safety and reliability of a key water resource facility for the State of California.

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2. Does the IRB have any recommendations or comments on the DWR organization or role of the IRB?

- Add a specific plan for execution of project integration
- Map interdependencies between tasks

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3. Does the IRB have any recommendations or comments on the strategy and structuring of the Comprehensive Needs Assessment approach?

- Conduct a comprehensive assessment of risk
- Consider interim actions to reduce risk for issues with significant risk to the public
- Establish evaluation criteria prior to formulating alternatives
- Document what is currently working well
- Include gain or loss of project benefits amongst the consequence categories to be considered in evaluating risk reduction

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3. Does the IRB have any recommendations or comments on the strategy and structuring of the Comprehensive Needs Assessment approach? Cont'd

- Evaluate and document existing project components for robustness, redundancy, reliability, and resiliency
- Adopt a value planning approach to alternative formulation
- Adopt a "begin with the end in mind" philosophy to ensure timely completion of the study

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4. Does the IRB have any recommendations or comments for Tasks 1–6?

- Generally applicable recommendations:
  - Use a common terminology
  - Ensure quality management includes initial assignment of adequate resources to do quality work
  - Enlist a holistic approach to evaluation of mechanical, electrical and control systems
  - Consider reliability of systems that deliver power to the “grid”
  - State assumptions that form the context of all assessments of risk

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4. Does the IRB have any recommendations or comments for Tasks 1–6?

- Task 1 – Restoration of Spillway Capacity
  - Revise task title to more closely match the intended objective
  - Reassess downstream consequence thresholds

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4. Does the IRB have any recommendations or comments for Tasks 1–6?

- Task 2 – Operational Needs Assessment
  - Address how climate change/variability has been accounted for in the operational plans for the reservoir

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4. Does the IRB have any recommendations or comments for Tasks 1–6?

- Task 3 – Flood Control Outlet Enhanced Reliability
  - Include hydraulic performance assessment for various gate operations

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4. Does the IRB have any recommendations or comments for Tasks 1–6?

- Task 4 – Low Level Outlet
  - Add reservoir evacuation capacity information to scope of work
  - Document/summarize analysis/assumptions related to reservoir sedimentation
  - Assess the project benefits that could be derived by enabling active management of the reservoir volume between elevations 350 and 640 feet

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4. Does the IRB have any recommendations or comments for Tasks 1–6?

- Task 5 – Embankment Reliability and Improvements
  - Include recommendations for collection of additional data to reduce uncertainty

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4. Does the IRB have any recommendations or comments for Tasks 1–6?

- Task 6 – Instrumentation and Monitoring
  - No recommendations

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5. Does the IRB have any other recommendations or comments?

- Describe the rationale for the selection of the 6 tasks included in the Comprehensive Needs Assessment

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Questions?